

FORM PTO-1390 (Modified) (REV 11-2000)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER <b>WAT0120</b>
<b>TRANSMITTAL LETTER TO THE UNITED STATES</b> <b>DESIGNATED/ELECTED OFFICE (DO/EO/US)</b> <b>CONCERNING A FILING UNDER 35 U.S.C. 371</b>				U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR <b>10/009714</b>
INTERNATIONAL APPLICATION NO. <b>PCT/AU00/00036</b>	INTERNATIONAL FILING DATE <b>24 January 2000 (24/01/2000)</b>		PRIORITY DATE CLAIMED <b>09 June 1999 (09/06/1999)</b>	
TITLE OF INVENTION <b>MULTI-PURPOSE STRUCTURAL COMPONENT</b>				
APPLICANT(S) FOR DO/EO/US <b>PRESTON, John Clement</b>				
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:				
<ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (24) indicated below.</li> <li>4. <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371 (c) (2))             <ol style="list-style-type: none"> <li>a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> has been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ol> </li> <li>6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).             <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto.</li> <li>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</li> </ol> </li> <li>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))             <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> have been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li>9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).</li> <li>10. <input type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).</li> <li>11. <input checked="" type="checkbox"/> A copy of the International Preliminary Examination Report (PCT/IPEA/409).</li> <li>12. <input checked="" type="checkbox"/> A copy of the International Search Report (PCT/ISA/210).</li> </ol>				
Items 13 to 20 below concern document(s) or information included:				
<ol style="list-style-type: none"> <li>13. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li>14. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li> <li>15. <input checked="" type="checkbox"/> A <b>FIRST</b> preliminary amendment.</li> <li>16. <input type="checkbox"/> A <b>SECOND</b> or <b>SUBSEQUENT</b> preliminary amendment.</li> <li>17. <input type="checkbox"/> A substitute specification.</li> <li>18. <input type="checkbox"/> A change of power of attorney and/or address letter.</li> <li>19. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.</li> <li>20. <input checked="" type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</li> <li>21. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</li> <li>22. <input checked="" type="checkbox"/> Certificate of Mailing by Express Mail</li> <li>23. <input checked="" type="checkbox"/> Other items or information:</li> </ol>				
Application Data Sheet and Check No. <b>101850</b>				

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR  
**10/009714**INTERNATIONAL APPLICATION NO.  
PCT/AU00/00036**531 Rec'd PCT****07 DEC 2001**ATTORNEY'S DOCKET NUMBER  
**WAT0120**

24. The following fees are submitted:

**CALCULATIONS PTO USE ONLY****BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :**

- |   |           |
|---|-----------|
| <input checked="" type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO ..... | \$1040.00 |
| <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO .....  | \$890.00  |
| <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO .....   | \$740.00  |
| <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) .....  | \$710.00  |
| <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) .....  | \$100.00  |

**ENTER APPROPRIATE BASIC FEE AMOUNT =****\$1,040.00**Surcharge of **\$130.00** for furnishing the oath or declaration later than  20  30 months from the earliest claimed priority date (37 CFR 1.492 (e)).**\$0.00**

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	
Total claims	12 - 20 =	0	x \$18.00	<b>\$0.00</b>
Independent claims	1 - 3 =	0	x \$84.00	<b>\$0.00</b>
Multiple Dependent Claims (check if applicable).			<input type="checkbox"/>	<b>\$0.00</b>

**TOTAL OF ABOVE CALCULATIONS =** **\$1,040.00**

- Applicant claims small entity status. See 37 CFR 1.27). The fees indicated above are reduced by 1/2.

**\$520.00****SUBTOTAL =** **\$520.00**Processing fee of **\$130.00** for furnishing the English translation later than  20  30 months from the earliest claimed priority date (37 CFR 1.492 (f)).**\$0.00****TOTAL NATIONAL FEE =** **\$520.00**

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable).

**\$0.00****TOTAL FEES ENCLOSED =** **\$520.00**

<b>Amount to be:</b>	<b>\$</b>
<b>refunded</b>	
<b>charged</b>	<b>\$</b>

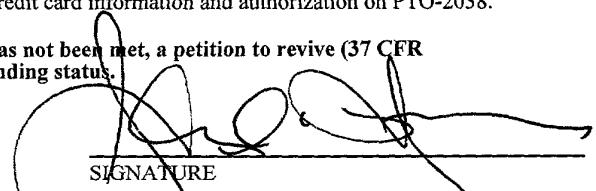
- A check in the amount of **\$520.00** to cover the above fees is enclosed.
- Please charge my Deposit Account No. \_\_\_\_\_ in the amount of \_\_\_\_\_ to cover the above fees. A duplicate copy of this sheet is enclosed.
- The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. **02-0385**. A duplicate copy of this sheet is enclosed.
- Fees are to be charged to a credit card. **WARNING: Information on this form may become public. Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

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**SIGNATURE**  
**JOHN F. HOFFMAN**  
**NAME**

**26,280****REGISTRATION NUMBER****DECEMBER 7, 2001****DATE**

10/009714

531 Rec'd PCT/US 07 DEC 2001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of )  
John Clement Preston ) Group:  
Serial No.: )  
Filed: ) Examiner:  
Title: MULTI-PURPOSE STRUCTURAL )  
COMPONENT )

**PRELIMINARY AMENDMENT DELETING MULTIPLE DEPENDENT CLAIMS**

Assistant Commissioner of Patents  
Washington, DC 20231

Sir:

Prior to calculating the filing fee, please enter the following amendments to the application.

**IN THE CLAIMS**

In claim 6, line 2, delete "elogated" and substitute therefor --elongated--.

In claim 6, line 3, delete "any one of the preceding Claims" and substitute therefor --claim 1--.

Please add the following new claims:

--9. A fabricated structural component, having six substantially planar faces corresponding to the sides of an elongated rectangular prism, comprising two single components, each according to claim 2, united as a dual component by a plurality of discrete, spaced apart spacer means, such that the corresponding edge faces of the two single components are spaced apart and co-planar, and wherein the spacer means are such that the distance between the centre lines of the rows of holes in each pair of corresponding edge faces is a whole number multiple of said pitch distance.

10. A fabricated structural component, having six substantially planar faces corresponding to the sides of an elongated rectangular prism, comprising two single components, each according to claim 3, united as a dual component by a plurality of discrete, spaced apart spacer means, such that the corresponding edge faces of the two single components are spaced apart and co-planar, and wherein the spacer means are such that the distance between the centre lines of the rows of holes in each pair of corresponding edge faces is a whole number multiple of said pitch distance.

11. A fabricated structural component, having six substantially planar faces corresponding to the sides of an elongated rectangular prism, comprising two single components,

each according to claim 4, united as a dual component by a plurality of discrete, spaced apart spacer means, such that the corresponding edge faces of the two single components are spaced apart and co-planar, and wherein the spacer means are such that the distance between the centre lines of the rows of holes in each pair of corresponding edge faces is a whole number multiple of said pitch distance.

12. A fabricated structural component, having six substantially planar faces corresponding to the sides of an elongated rectangular prism, comprising two single components, each according to claim 5, united as a dual component by a plurality of discrete, spaced apart spacer means, such that the corresponding edge faces of the two single components are spaced apart and co-planar, and wherein the spacer means are such that the distance between the centre lines of the rows of holes in each pair of corresponding edge faces is a whole number multiple of said pitch distance.--

Respectfully submitted,

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JFH/pmp

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Date: December 7, 2001

MULTI-PURPOSE STRUCTURAL COMPONENT

## Technical Field

5 This invention relates to prefabricated structural components adapted to be assembled to form various demountable building and other structures.

## Background Art

10 Toy construction kits are known wherein a plurality of identical components are provided adapted to be assembled together in a variety of ways to form models of a great variety of different articles and structures. Usually the individual components are adapted to be held together by inter-engaging formations providing some frictional restraint on disengagement. Alternatively 15 specific coupling pieces adapted to be similarly engaged with two or more basic components may be provided. In some instances the structural integrity of the finished model depends upon the simultaneous inter-engagement of more than two components.

20 The present invention is not concerned with the assembly of model structures but rather with the assembly of full scale, load bearing, skeletal frameworks of buildings and engineering structures generally.

25 Therefore, possibly more relevant prior art is the well-known demountable scaffolding used for temporary ancillary structures at building construction sites. Such scaffolding comprises a multiplicity of basic tubular members and many and varied coupling elements for fastening the basic members together. Typically the coupling elements comprise clamps, pins extending through clearance holes in the members and temporarily held in place 30 by cross-cotter pins, U-shaped straps on the members adapted to be aligned to receive wedges and other quick release, fastening devices. The coupling

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elements and the adaptations of the basic members of such scaffolding to their associated coupling elements frequently displays considerable ingenuity providing for the rapid assembly and disassembly of the scaffolding without the need for tools or anything but the most basic of tools, such as a hammer.

5

### Summary of Invention

The emphasis in prior known scaffolding is on the quick assembly and disassembly of individually lightweight members able to be manhandled into position. Thus, strength in the finished scaffolding is ensured by using a considerable number of closely spaced members. This renders conventional scaffolding components unsuitable for use in demountable structures that substantially replicate the load bearing, skeletal structures of finished buildings and the like.

15

An object of the present invention is to provide multi-purpose, demountable and re-useable structural components that may be used in the construction of temporary buildings or other structures at construction sites adapted for habitation or normal use by building workers and others during the construction of permanent structures at the site in question.

Typically the components of the invention may be used as columns and/or beams in demountable structures such as: protective pedestrian walkways adjacent to construction sites; site offices, possibly integrated with such walkways; multi-storey towers providing access and service facilities to the various floors of a multi-storey building under construction; garages; storage sheds; barracks; and like temporary building ancillaries required at civil engineering construction sites.

30 According to one aspect, the invention consists in a fabricated structural component having five substantially planar faces corresponding to five faces of

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a an elongated rectangular prism, namely an elongated side face, including two longitudinally extending edge margins, two elongated edge faces, and two end faces;

5 wherein each said side face is pierced by a plurality of fastener clearance holes arranged in two straight rows, each extending longitudinally of a respective one of said margins, wherein the holes in each row in said side face have a constant centre to centre pitch distance, wherein the distance from the centre of each end hole in each row of holes in said side face to a respectively adjacent end face of the component is substantially one half of said pitch distance, wherein the distance from the centre line of each row of holes in said 10 side face to a respectively adjacent edge face of the component is substantially one half of said pitch distance, and wherein the centre lines of the rows of holes in said side face are separated by a distance substantially equal to a whole number multiple of said pitch distance;

15 wherein each said edge face is pierced by a plurality of fastener clearance holes arranged in a straight row extending longitudinally of said each edge face, wherein the centre to centre distance between the holes in the row in said each edge face equals said pitch distance, wherein the distance from the centre of each end hole in the row of holes in said each edge face to a respectively adjacent end face of the component is substantially one half of said pitch 20 distance, and wherein the distance from the centre line of the row of holes in said each edge face to the side face of the component is substantially one half of said pitch distance; and

25 wherein each end face is pierced by at least two fastener clearance holes, wherein the distance from the centre of each of said at least two holes in each end face to said side face is substantially one half of said pitch distance and wherein the distance from the centre of each of said at least two holes in each end face to a respectively adjacent edge face is substantially one half of said pitch distance.

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According to a second aspect of the invention, it consists in a fabricated structural component, having six substantially planar faces corresponding to the sides of an elongated rectangular prism, comprising two components, each according to the first aspect of the invention, united by a plurality of discrete, 5 spaced apart spacer means, such that corresponding edge faces of the two components according to the first aspect are spaced apart and co-planar, and wherein the spacer means are such that the distance between the centre lines of the rows of holes in each pair of corresponding edge faces is a whole number multiple of said pitch distance.

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It is pointed out that the whole number referred to in the above description of structural components according to the second aspect of the invention may or may not have the same value as the whole number referred to in the description of structural components according to the first aspect of the 15 invention.

In preferred embodiments of the first aspect of the invention the component is fabricated from two, angle sectioned elements, each comprising two flanges meeting at substantially a ninety degree included angle, for example 20 lengths of rolled structural steel angle, spaced apart and rigidly held together by discrete and spaced apart spacer plates extending between and welded to co-planar flanges of the two elements. Thus two parallel, spaced apart, co-planar flanges of the two elements constitute the margins of said side face, and the other flanges of the two elements respectively constitute the said edge faces. Of course, this spaced apart angle construction carries through to preferred 25 embodiments of the second aspect of the invention. This is an important feature of the preferred embodiments as it provides hand access to the interior of components according to the second aspect of the invention, and facilitates such access to the side of a component according to the first aspect remote from an assembler of the components when putting together a structure made of 30 components according to the invention. Such access is convenient, when

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assembling the components using removable fasteners in the form of bolts and nuts, to enable both the head of each bolt and a nut threaded on it to be simultaneously engaged by appropriate spanners.

- 5 By way of example two embodiments of the above-described invention are described in more detail hereinafter with reference to the accompanying drawings.

Brief description of the Drawings

- 10 Figure 1 is a perspective view of an end portion of a structural component according to the first aspect of the invention.

- 15 Figure 2 is a front elevation of the component of figure 1, drawn to a smaller scale.

Figure 3 is both a plan view and an inverted plan view of the component of figure 2, in that the component is identical in appearance when viewed from above or below.

- 20 Figure 4 is an end elevation of the component of figure 2.

- Figure 5 is a sectional view taken on line 5-5 of figure 2, drawn to a larger scale.

- 25 Figure 6 is a view similar to figure 1 of a component according to the second aspect of the invention.

- 30 Figure 7 is both a front and a rear elevation of the component of figure 6, in that the component is identical in appearance when viewed from the front and the rear, drawn to a smaller scale.

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Figure 8 is an end elevation of the component of figure 7.

Figure 9 is a sectional view taken on line 9-9 of figure 7.

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Best Mode of putting the invention into effect.

The multi-purpose structural component illustrated by figures 1 to 5 inclusive comprises two identical, elongated angle sectioned elements 10, each comprising side flanges 11 and edge flanges 12 (see figure 5), and a plurality of discrete and spaced apart spacer plates 13 and 14 extending between and welded to co-planar flanges 11 of the two angle sectioned elements. Thus, the two angle sectioned elements 10 are held rigidly together in a parallel, spaced apart configuration. The two, co-planar flanges 11 together constitute longitudinally extending margins of the side face of the structural component (and for that reason have been captioned side flanges herein), whereas each of the flanges 12 constitutes an edge face of the component, (and for that reason have been captioned edge flanges herein).

20 The two angle sectioned elements 10 are further held and rigidified by end spacer plates 16, constituting the end faces of the component now being described.

Each of the side flanges 11 and each of the edge flanges 12 is pierced by 25 a straight row of fastener clearance holes 15 extending longitudinally of the respective flanges. In accordance with the invention, and as indicated in figures 2, 3 and 5, the holes 15 in each row are spaced apart by a common, centre to centre, pitch distance "p", the distance from the centres of the end holes in each row to their respectively adjacent ends of the component is " $p/2$ ", 30 the distance from the centre line of the row of holes in each edge flange 12 to the side face of the component is " $p/2$ ", and the distance from the centre line of

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each row of holes in the side flanges 11 to their respectively adjacent edge face is also "p/2". Moreover the spacer plates 13, 14 and 16 are such that the distance between the centre lines of the rows of holes in the side flanges 11 is "np", where "n" is a whole plural number. In the illustrated embodiment "n" is  
5 2, but in other embodiments it may be 1 or a number larger than 2.

Furthermore, each end spacer plate 16 is pierced by two fastener clearance holes 15, and, as may best be seen in figure 5, the centres of those two holes are spaced from the side face and from their respectively adjacent edge  
10 faces by "p/2".

In other examples of the invention, the end spacer plate may be pierced by one or more further holes disposed in a row of which the two illustrated holes are end holes of the row. In such instances all holes in the row would be  
15 equally spaced apart, so as to have a centre to centre pitch distance of "p".

Furthermore some or all of the spacer plates 14 may be replaced by angle sectioned spacers or T-sectioned spacers, wherein one flange of the angle or the head of the T corresponds to the plate 14, provided the other flange of the angle  
20 or the stem of the T is appropriately spaced from the immediately adjacent holes 15.

It will be apparent to a man skilled in the art that the structural component illustrated by figures 1 to 5 would display considerable versatility as  
25 an element of many and varied, complex, demountable structures. Two such components may be bolted together in end to end or face to face abutment with various degrees of overlap, or may be bolted together at Tee or Cross joints at a great number of positions, merely by appropriately aligning selected fastener holes for the receipt of bolts or other fasteners.

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The structural component illustrated by figures 6 to 9 inclusive may be described as a dual component. It comprises two single components, each according to figures 1-5 inclusive, which require no further description, with each single component's corresponding edge flanges 12 held in a parallel, spaced apart configuration by spacer plates 17 in register with the single components' spacer plates 14, and spacer plates 18 in register with the single components' spacer plates 13. Furthermore the end spacer plates 16 of the two single components are preferably integrally merged as margins of an end spacer plate 20 in the dual component.

10

Also internal cross-braces 19 may be provided in register with one or more of the pairs of spacer plates 17, to further rigidify the dual component.

15 The spacer plates 17 and 18 and the end spacer plate 20 are such that the centre lines of the rows of holes in the corresponding flanges 12 of the single components are spaced by a whole number multiple of the pitch distance "p", which may or may not be the same whole number multiple applicable to the distance between the rows of holes in the side flanges 11 of the single components.

## Claims

1. A fabricated structural component having five substantially planar faces corresponding to five faces of a an elongated rectangular prism, namely an 5 elongated side face, including two longitudinally extending edge margins, two elongated edge faces, and two end faces;

wherein each said side face is pierced by a plurality of fastener clearance holes arranged in two straight rows, each extending longitudinally of a respective one of said margins, wherein the holes in each row in said side face 10 have a constant centre to centre pitch distance, wherein the distance from the centre of each end hole in each row of holes in said side face to a respectively adjacent end face of the component is substantially one half of said pitch distance, wherein the distance from the centre line of each row of holes in said side face to a respectively adjacent edge face of the component is substantially 15 one half of said pitch distance, and wherein the centre lines of the rows of holes in said side face are separated by a distance substantially equal to a whole number multiple of said pitch distance;

wherein each said edge face is pierced by a plurality of fastener clearance holes arranged in a straight row extending longitudinally of said each edge face, 20 wherein the centre to centre distance between the holes in the row in said each edge face equals said pitch distance, wherein the distance from the centre of each end hole in the row of holes in said each edge face to a respectively adjacent end face of the component is substantially one half of said pitch distance, and wherein the distance from the centre line of the row of holes in 25 said each edge face to the side face of the component is substantially one half of said pitch distance; and

wherein each end face is pierced by at least two fastener clearance holes, wherein the distance from the centre of each of said at least two holes in each 30 end face to said side face is substantially one half of said pitch distance and wherein the distance from the centre of each of said at least two holes in each

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end face to a respectively adjacent edge face is substantially one half of said pitch distance.

2. A structural component according to claim 1 comprising two  
5 identical, elongated angle sectioned elements, each comprising a side flange and  
an edge flange, two end plates, each extending from an end of one angle  
sectioned element to a corresponding end of the other angle sectioned element  
and a plurality of discrete and spaced apart spacers extending between and  
welded to co-planar side flanges of the two angle sectioned elements, whereby  
10 the two angle sectioned elements are held rigidly together in a parallel, spaced  
apart configuration, wherein each side flange constitutes a margin of said side  
face of the component, wherein each edge flange constitutes an edge face of the  
component, and wherein said end plates constitute the end faces of the  
component.

15

3. A structural component according to claim 2 wherein each spacer  
is a plate.

4. A structural component according to claim 2 wherein at least one  
20 of said spacers is T-sectioned.

5. A structural component according to claim 2 wherein at least one  
of said spacers is angle sectioned.

25 6. A fabricated structural component, having six substantially planar  
faces corresponding to the sides of an elongated rectangular prism, comprising  
two single components, each according to any one of the preceding Claims,  
united as a dual component by a plurality of discrete, spaced apart spacer  
means, such that corresponding edge faces of the two single components are  
30 spaced apart and co-planar, and wherein the spacer means are such that the

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distance between the centre lines of the rows of holes in each pair of corresponding edge faces is a whole number multiple of said pitch distance.

7. A fabricated structural component according to claim 6 wherein  
5 said spacer means further comprise at least one internal cross brace.

8. A structural component according to claim 6 wherein the end faces of the single components at corresponding ends thereof are merged into a single end face at each end of the dual component.

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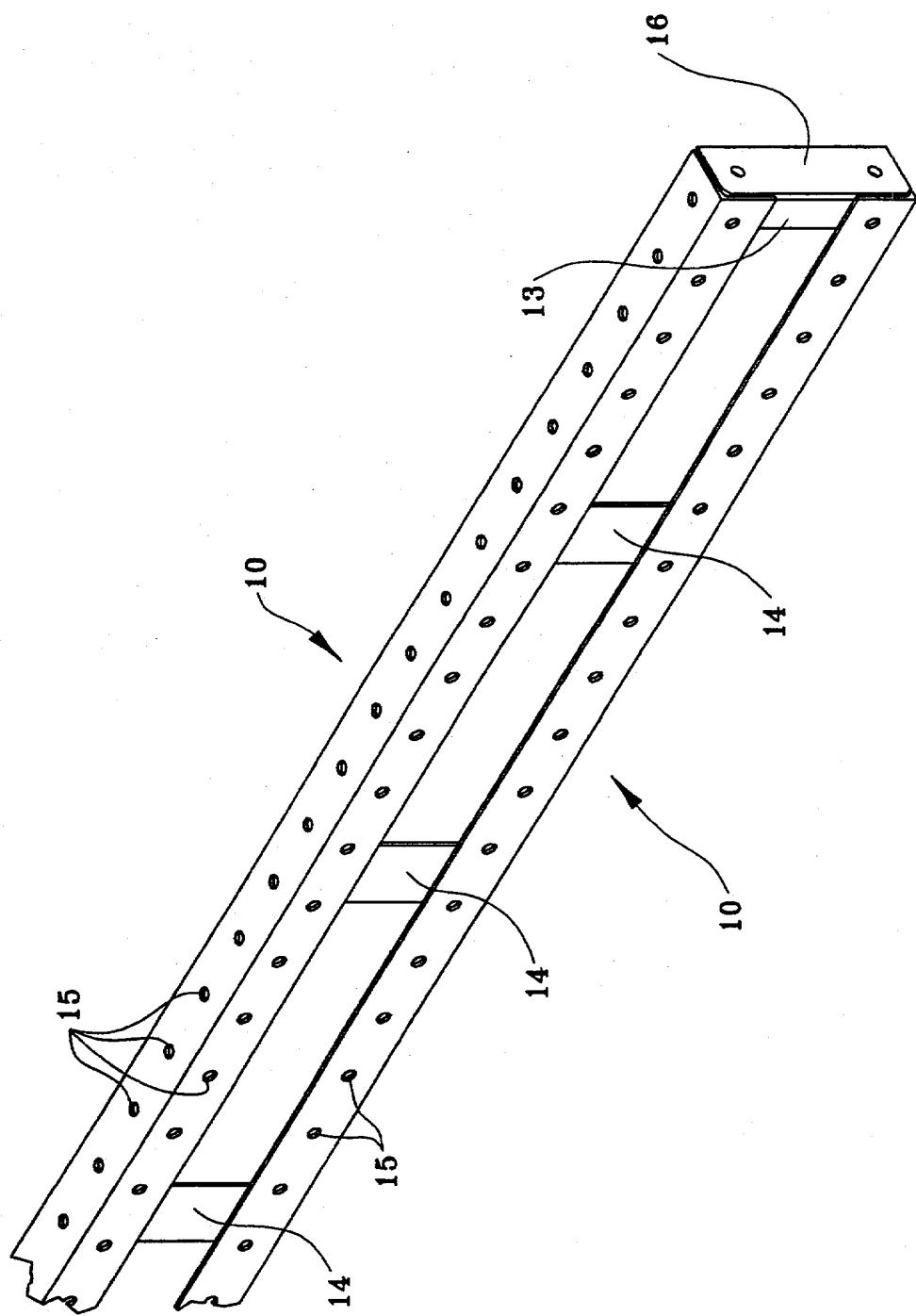


Fig. 1

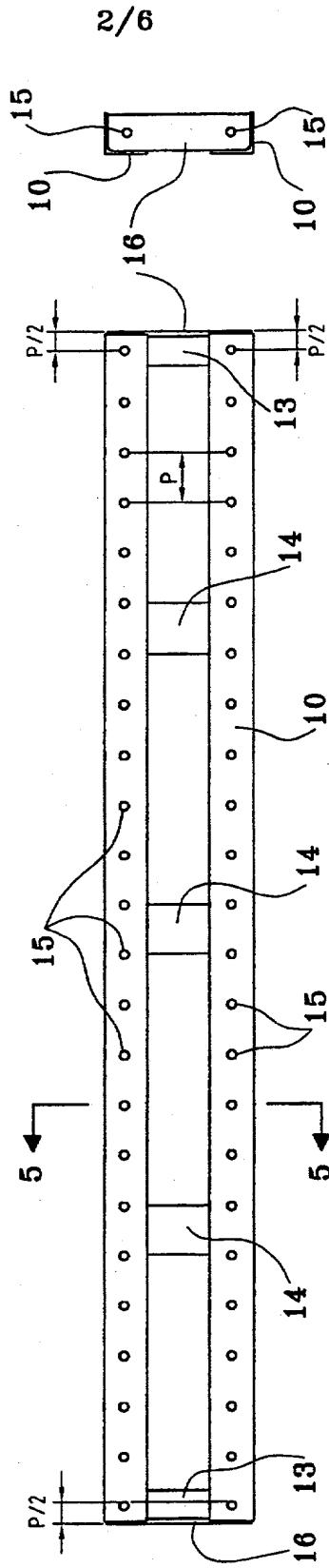
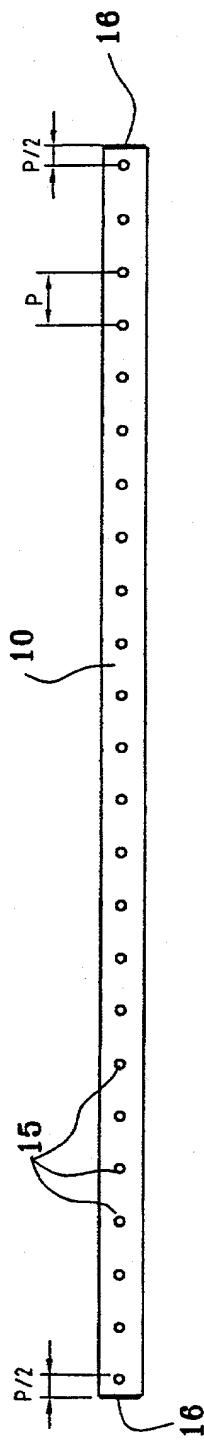
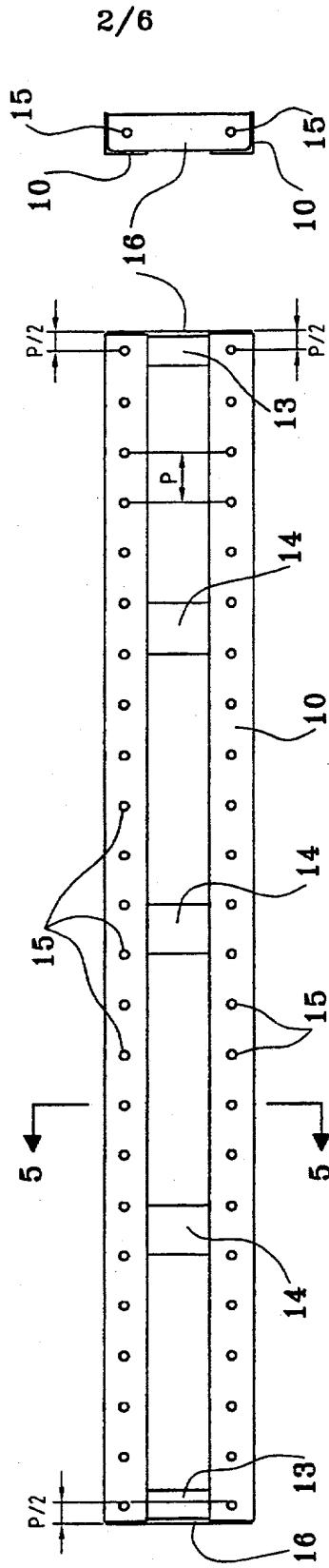


Fig. 4



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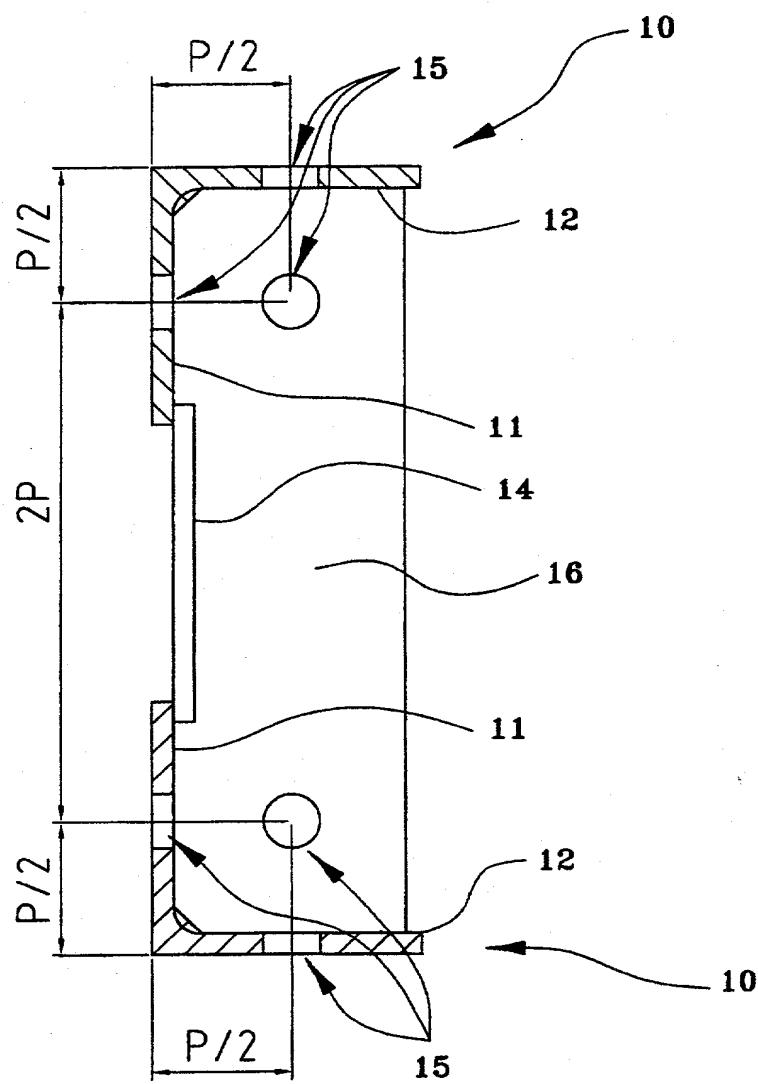


Fig. 5

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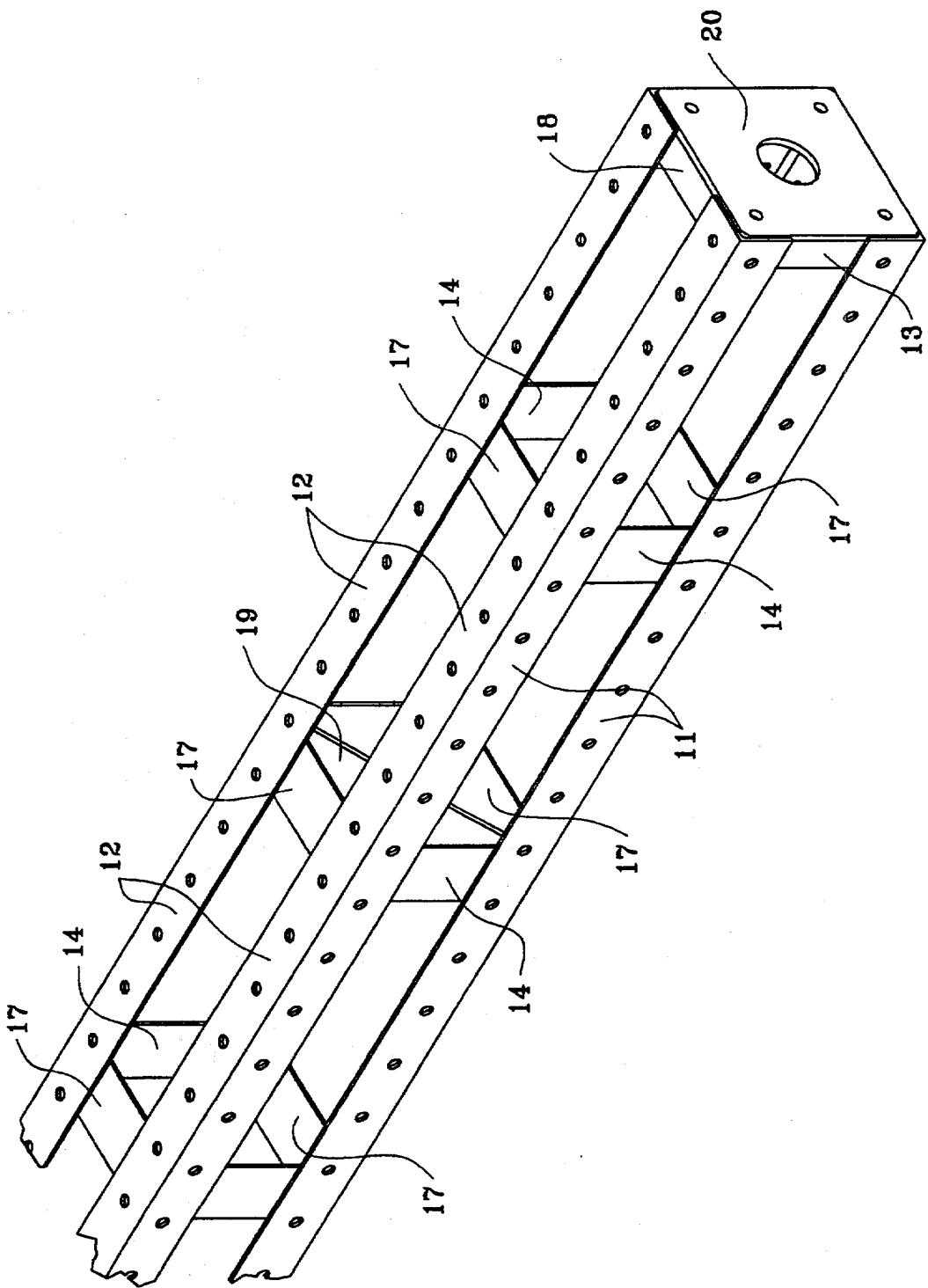


Fig. 6

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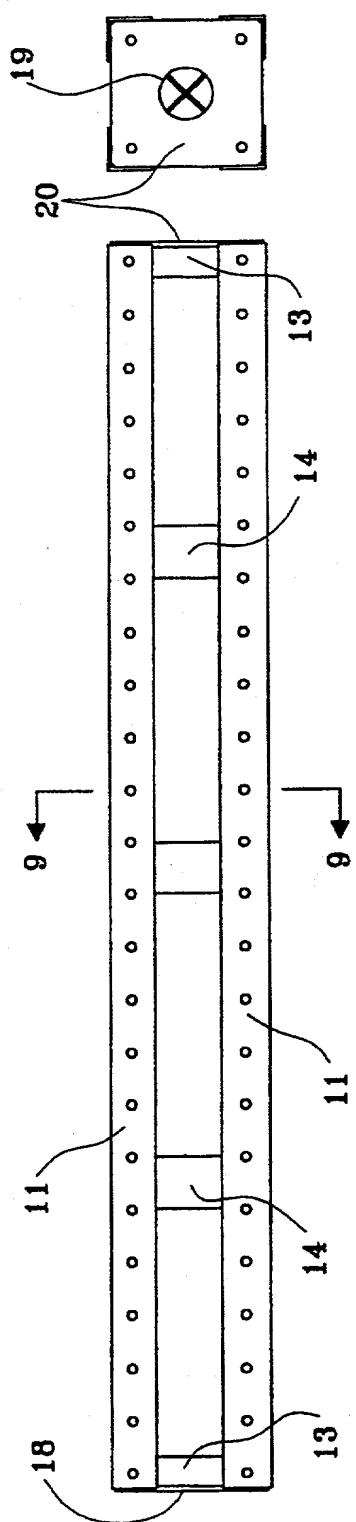


Fig. 8

Fig. 7

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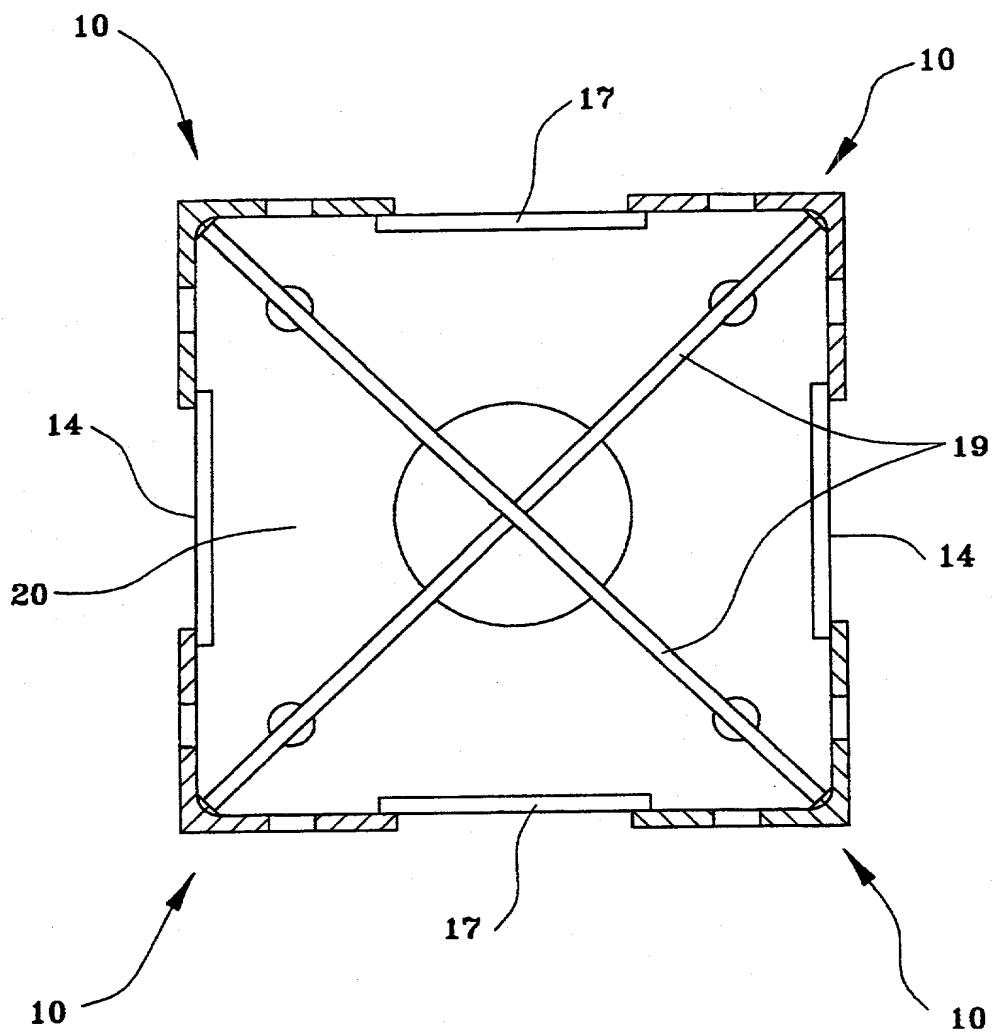


Fig. 9



ATTORNEY'S DOCKET NO.       

AFY

## DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name:

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**MULTI-PURPOSE STRUCTURAL COMPONENT**

---

the specification of which:

[ ] is attached hereto.

[X] was filed on 24th January, 2000 as  
International Application Serial No. PCT/AU00/00036  
and was amended on \_\_\_\_\_

(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

**PRIOR FOREIGN APPLICATION(S)**

**Priority Claimed**

PQ0881	Australia	09.06.1999
(Number)	(Country)	(Day/Month/Year Filed)
PQ3690	Australia	27.10.1999
(Number)	(Country)	(Day/Month/Year Filed)

[x]	[ ]
Yes	No
[x]. [ ]	
Yes	No

I hereby claim the benefit under Title 35, United States Code, §120, of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56, which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

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(Application Serial No.) (Filing Date)      (Status)(patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements were made with the knowledge that willful false statements

and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

As a named inventor, I hereby appoint John F. Hoffman, Regis. No. 26,280; Anthony Niewyk, Regis. No. 24,871; Kevin R. Erdman, Regis. No. 33,687; Brian C. Pauls, Regis. No. 40,122; Michael D. Smith, Regis. No. 50,181; Arthur R. Whale, Regis. No. 18,778; Lawrence A. Steward, Regis. No. 32,309; Edward J. Prein, Regis. No. 37,212; James D. Hall, Regis. No. 24,893 and Ken C. Decker, Regis. No. 25,422; of BAKER & DANIELS, as attorney(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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The undersigned hereby authorizes the U.S. attorney or agent named herein to accept and follow instructions from Watermark as to any action to be taken in the Patent and Trademark Office regarding this application without direct communication between the U.S. attorney or agent and the undersigned. In the event of a change in the persons from who instructions may be taken, the U.S. attorney or agent named herein will be so notified by the undersigned.

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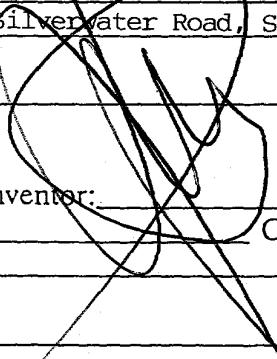
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1-50  
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Date \_\_\_\_\_